

COMMUNICATIONS INTERFACE GROUP (CIG)

INTRODUCTION:

This performance exercise allows you to check and reinforce your understanding of the AN/TYC-39A CIG. Your objective is to correctly answer at least 14 out of 20 questions within 1 hour.

ITEMS YOU WILL NEED FOR THIS EXERCISE:

Check your work position and make sure that you have the following items. If any are missing, call your instructor.

- a. TM 11-5805-790-12-1.
- b. TM 11-5805-790-12-6.
- c. TM 11-5805-790-12-7.
- d. TM 11-5805-790-12-8.

THE LESSON STRATEGY:

- 1. You will have 1 hour in which to complete this performance exercise. Mark your answers directly on the performance exercise.
- 2. When you have completed this performance exercise, turn it in to your instructor.
- 3. If there are no questions you may begin.

APPLICATION:

- 1. Using TM 11-5805-790-12-1, TM 11-5805-790-12-6, TM 11-5805-790-12-7, and TM 11-5805-790-12-8 answer the 20 questions on the practical exercise provided.
- 2. When you have completed the exercise, have your instructor grade it for you.
- 3. If it is not clear what you are required to do, ask your instructor for clarification.

Whenever pronouns or other references denoting gender are appear in this document, they are written to refer to either male or female. unless otherwise indicated.

150-74G10/E01-LP1

EXERCISE:

1. Which circuit card generates all clocks required by LTU #40?

2. How many interface lines exist between the ILIP and the CAPC?

3. What type of interface packet is used between the ILIP and the LCF circuit cards?

4. What is indicated by a low 'TBEN' signal sent from an LTU to an ILIP?

5. How many ILI interfaces can the LCFOP support?

6. What circuit card is the bus master of the Multibus II interface?

7. What is the purpose of the MDL circuit card and why is it required?

8. What is the purpose of the PSB controller on the LCF?

9. What are the two different translation algorithms used by the MDL?

10. What circuit card provides channel coordination and error control on mode I, V, VI lines?

11. What are the two ways that the ILIP control the MCS and modem control function?
-
-
-
12. How many modem cards does each MCSU circuit card control under normal operation?
-
13. The interface between the ILIP and the LCF is a parallel interface.
- TRUE or FALSE
14. The DLCP assembles catalogs into ILI and DLCP segments.
- TRUE or FALSE
15. One LCF card contains eight serial communication controller channels.
- TRUE or FALSE
16. The LCF removes the X.25 link layer address and control fields.
- TRUE or FALSE
17. The MDL is required because the LCF and DLCP have different bus and data structures.
- TRUE or FALSE
18. The LCF reports to the MP the complete status as to how much of each type of information is available for transfer.
- TRUE or FALSE
19. MCSU 1 is assigned the highest priority.
- TRUE or FALSE
20. Only one MCSU is allowed to transmit data to the ILI at a time.
- TRUE or FALSE

150-74G10/E01-LP1

PRACTICAL EXERCISE
ANSWER KEY

1. Which circuit card generates all clocks required by LTU #40?
ILIP12 (TM-12-1 pg 1-67 and TM 12-6 pg 7-50)
2. How many interface lines exist between the ILIP and the CAPC?
Five lines: Two select, Two status, and One reset.
TM-12-1 pg 1-67
3. What type of interface packet is used between the ILIP and the LCF circuit cards?
The Link layer interface; X.25 LAPB protocol. (TM-12-1 pg 1-92)
4. What is indicated by a low 'TBEN' signal sent from an LTU to an ILIP?
Indicates to the ILIP that the LTU transmit buffers are empty. (TM-12-1 pg 1-69)
5. How many ILI interfaces can the LCFOP support?
Up to seven interfaces. (TM-12-1 pg 1-94)
6. What circuit card is the bus master of the Multibus II interface?
DLCP (TM-12-1 pg 1-96 under "CSM" paragraph)
7. What is the purpose of the MDL circuit card and why is it required?
It controls and coordinates the transfer of information between the DLCP and the MP by providing bit translation and data buffering. The MDL is required to accommodate the bit/byte orientation and bus-length differences between the IOE and SBX busses. (TM-12-1 pg 1-99)
8. What is the purpose of the PSB controller on the LCF?

150-74G10/E01-LP1

Minimize the processing required by the LCFOP. (TM-12-1 pg 1-94)

9. What are the two different translation algorithms used by the MDL?

Last-in/first-out and First-in/first-out (TM-12-1 pg 1-99)

10. What circuit card provides channel coordination and error control on mode I, V, VI lines?

ILIP (TM-12-1 pg 1-21)

11. What are the two ways that the ILIP control the MCS and modem control function?

They can be controlled manually via the switch supervisor in response to an equipment command and automatically via the ILI servicing the modem in response to a route command. (TM-12-1 pg 1-91)

12. How many modem cards does each MCSU circuit card control under normal operation?

sixteen (Check Slide 29)

13. The interface between the ILIP and the LCF is a parallel interface.

TRUE or FALSE (ANS. FALSE) (TM-12-1 pg 1-68)

14. The DLCP assembles catalogs into ILI and DLCP segments.

TRUE or FALSE (ANS. TRUE) (TM-12-1 pg 1-66)

15. One LCF card contains eight serial communication controller channels.

TRUE or FALSE (ANS. TRUE) (TM-12-1 pages 1-94 and 1-95)

16. The LCF removes the X.25 link layer address and control fields.

TRUE or FALSE (ANS. TRUE) (TM-12-1 pages 1-66 and 1-94)

17. The MDL is required because the LCF and DLCP have different bus and data structures.

TRUE or FALSE (ANS. FALSE) (TM-12-1 pg 1-66)

18. The LCF reports to the MP the complete status as to how much of each type of information is available for transfer.

TRUE or FALSE (ANS. FALSE) (TM-12-1 pg 1-66)

19. MCSU 1 is assigned the highest priority.

TRUE or FALSE (ANS. FALSE) (Lesson Plan, page 38 item 4)

20. Only one MCSU is allowed to transmit data to the ILI at a time.

TRUE or FALSE (ANS. TRUE) (Lesson Plan, page 38 item 1)

AN/TYC-39A COMMUNICATIONS INTERFACE GROUP

INTRODUCTION:

This practical exercise (PE) will provide you with the time to practice and reinforce your understanding of the CIG fault isolation procedures. Your objective is to correctly answer at least 7 out of 10 questions within 30 minutes and correctly identify 2 out of 3 faults within 30 minutes per fault.

ITEMS YOU WILL NEED FOR THIS LESSON:

Check your work position and make sure you have the following items. If any items are missing, call for an instructor.

- a. AN/TYC-39A.
- b. TM-11-5805-790-12 series.
- c. TM-11-5805-790-34 series.
- d. Oscilloscope.
- e. Multimeter.
- f. Card extractor.

THE LESSON STRATEGY:

This PE directs you in your practice of understanding how to troubleshoot the CIG using the fault isolation charts and diagnostics. The primary aid you will use is the technical manuals.

APPLICATION:

1. You will have 30 minutes in which to correctly answer 7 out of 10 question and 30 minutes per 2 out of 3 faults.
2. When you have completed the performance exercise, turn it into your instructor.
3. Upon completion of the performance exercise, there will be a review and question/answer period.
4. If there are no questions, you may begin.

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EXERCISE:

1. You find that MDL A is faulty. What rack, row and slot is this card located in?

2. You get a mode status of MDST ILI 11 da BIST =00002 what card would you replace?

3. You are running DDLC on DLC B and get an error code of 500010 what card would you replace?

4. What is the pass code for the DLCP diagnostic?

5. What card is in A25A608?

6. How many MCS cards are there and what rack are they located in?

7. MDST ILI 09 34 ECSI=0187D. What card would you replace?

8. What ECSI code would you get if the X.25 link was down?

9. What commands are used to reload the DLC?

10. When running the loopback test on the MCS card what channel would you use?

COMMUNICATION INTERFACE GROUP TROUBLESHOOTING

1. SYMPTOM: _____

CORRECTIVE ACTION: _____

REFERENCES USED: _____

2. SYMPTOM: _____

CORRECTIVE ACTION: _____

REFERENCES USED: _____

3. SYMPTOM: _____

CORRECTIVE ACTION: _____

REFERENCES USED: _____

SUMMARY:

This concludes your practice of CIG fault isolation. The CIG is the only means for information to get from the COMSEC to the processor so it is crucial to the message switch operation that this group is properly maintained.